MAT 1033C -- Martin-Gay   Name_____
Intermediate Algebra   Date _____
Chapter 4 Exam (4.1, 4.3)   Day/Time: _____
Summer 2019

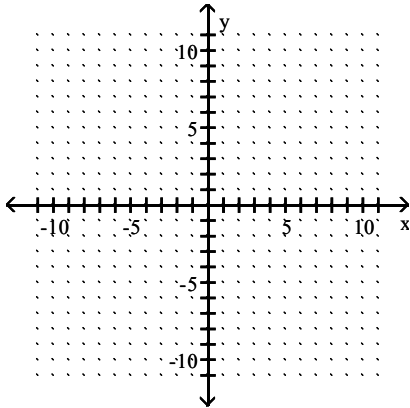You *MUST* show your work to receive any credit. This exam is worth 100 points. Each problem is worth 10 points.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve the system of equations graphically.

1)   1) _____
$$\begin{cases} 4x + \ y = 14 \\ \ x - 2y = 17 \end{cases}$$

A) $(5, 6)$ B) $(-6, -5)$ C) $(-6, 5)$ D) $(5, -6)$

Solve the system of equations.

2)   2) _____
$$\begin{cases} \ x - 3y = 1 \\ 7x - 2y = 7 \end{cases}$$
   A) $(-1, -1)$ B) $(1, 0)$ C) $(2, 1)$ D) $\varnothing$

3)   3) _____
$$\begin{cases} -3x - 7y = -9 \\ -7x + 4y = 40 \end{cases}$$
   A) $(4, 3)$ B) $(4, -3)$ C) $(-4, -3)$ D) $(-4, 3)$

Solve the system.

4)
$$\begin{cases} 2x + 9y = -35 \\ 12x + 3y = 45 \end{cases}$$

    A) (−3, 5)   B) (12, −12)   C) (5, −5)   D) (−5, 5)

5)
$$\begin{cases} -2x - 5y = 18 \\ -7x - 4y = 9 \end{cases}$$

    A) (−1, −4)   B) (1, −4)   C) (1, 4)   D) (−1, 4)

6)
$$\begin{cases} \dfrac{x}{5} + \dfrac{y}{10} = 1 \\ \dfrac{x}{3} - \dfrac{y}{6} = 0 \end{cases}$$

    A) $\left(5, \dfrac{5}{2}\right)$ B) $\left\{(x, y) \mid \dfrac{x}{5} + \dfrac{y}{10} = 1\right\}$

    C) $\left(\dfrac{5}{2}, 5\right)$ D) ∅

Solve the problem.

7) 35,000 people attended a ballgame at a stadium that offers two kinds of seats: general admission and reserved. The day's receipts were $244,000. How many people paid $12.00 for reserved seats, and how many paid $4.00 for general admission?

    A) Reserved: 9000 ; general admission: 26,000
    B) Reserved: 22,000 ; general admission: 13,000
    C) Reserved: 13,000 ; general admission: 22,000
    D) Reserved: 26,000 ; general admission: 9000

7) _____

8) A chemist needs 200 milliliters of a 42% solution but has only 20% and 60% solutions available. Find how many milliliters of each that should be mixed to get the desired solution.

    A) 110 ml of 20%; 90 ml of 60%   B) 95 ml of 20%; 105 ml of 60%
    C) 90 ml of 20%; 110 ml of 60%   D) 95 ml of 20%; 110 ml of 60%

8) _____

9) A shoe company will make a new type of shoe. The fixed cost for the production will be $24,000. The variable cost will be $36 per pair of shoes. The shoes will sell for $105 for each pair. How many pairs of shoes will have to be sold for the company to break even on this new line of shoes?

    A) 229 pairs   B) 348 pairs   C) 667 pairs   D) 69 pairs

9) _____

10) The perimeter of a triangle is 28 centimeters. Twice the length of the longest side minus the length of the shortest side is 31 centimeters. The sum of the length of the longest side and twice the sum of both the other side lengths is 39 centimeters. Find the side lengths.

    A) No solution   B) 3 cm, 8 cm, 17 cm
    C) 2 cm, 8 cm, 18 cm   D) 3 cm, 9 cm, 16 cm

10) _____